



## TECHNICAL UNIVERSITY OF MOMBASA

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SCHOOL OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 4502: TRANSPORT ENGINEERING II

END OF SEMESTER EXAMINATION

**SERIES:** JANUARY 2025

**TIME:** 2 HOURS

### **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **five** questions.

Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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### **QUESTION ONE (COMPULSORY) 30 Marks**

- Mobility and accessibility are terms used in transportation planning. Define these two terms (4 marks)
- State **FOUR** factors that govern the issue of centralization versus decentralization (4 marks)
- Differentiate between Formal land use and Functional land use (4 marks)
- Briefly explain how transportation affect economic development of an area (6 marks)
- State the basic assumptions made in the Von Thunen's Regional Land Use Model (3 marks)



- f) What is the meaning of the term “transfer effects” as used in transportation development? (2 marks)
- g) Mention the uses of desire paths in transportation planning (2 marks)
- h) Using appropriate examples, differentiate between “Urban form” and “Urban (spatial) structure” (5 marks)

**ANSWER ANY TWO QUESTIONS FROM THIS SECTION**

**QUESTION TWO (20 marks)**

- a) i) State the **THREE** essential components of transportation. (3 marks)
- ii) With the aid of a sketch, explain the interaction between the **THREE** components in a(i) above. (7 marks)
- b) Discuss briefly **THREE** typologies of decentralization (6 marks)
- c) Mention **FOUR** Merits of centralization (4 marks)

**QUESTION THREE (20 Marks)**

- a) There are various factors that affect land development process. Using a diagram explain clearly the role of Transportation in Land Use (9 marks)
- b) Explain clearly the role of Transport in Regional Development (8 marks)
- c) Using appropriate examples, define “Transportation planning” (3 marks)

**QUESTION FOUR (20 Marks)**

- a) Discuss the major components of spatial imprint of urban transportation (10 marks)
- b) Explain clearly the Emerging Land Use Concerns about urban sprawls (6 marks)
- c) Discuss the State Roles in Land use/transportation planning requirements (4 marks)

**QUESTION FIVE (20 Marks)**

- a) Discuss the following **THREE** New approaches to development:
  - i) Neo-traditional Design



- ii) Cluster Development
- iii) Transfer or purchase of development rights (9 marks)

b) With the aid of a flow chart explain the bond between transportation and land-use. (8 marks)

c) What are the main causes of urbanization? List **TWO** basic elements of urbanization (3 marks)

